

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating
Permit: F-20-024
St. Elizabeth Medical Center – Edgewood
1 Medical Village Drive
Edgewood, KY 41017
June 8, 2020

Jacob Zortman, Reviewer

SOURCE ID: 21-117-00186
AGENCY INTEREST: 48326
ACTIVITY: APE20190003

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 8062, General Medical and Surgical Hospitals

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Kenton

Nonattainment Area ☐ N/A ☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☒ Ozone ☐ Lead

If yes, list Classification: Marginal

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☒ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☐ Yes ☒ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

The Saint Elizabeth Medical Center in Edgewood Kentucky consists of the Main Building, Outpatient Surgical Center (OSC), Hospice, and Family Practice Center (FPC).

The main building utilizes boilers for space and process heating, and has diesel generators for emergency power. All the boilers are fueled by natural gas, and have backup diesel fuel from two 20,000 gallon storage tanks located on site.

The outpatient surgical center uses the steam from the boilers for both space heating and sterilization, and includes a diesel-fueled generator for powering this facility during power outages.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-20-024

Activities: APE20190003

Received: 11/14/2019

Application Complete Date(s): 6/8/2020

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐ Yes ☒ No

Description of Action:

- EU 05-03 and EU 05-04 (Lattner 1.3 mmBtu/hr each) boilers in the OSC have been removed
- Addition of two 150 hp (1.004 mmBtu/hr) Cleaver Brooks boilers (EU 05-07 and EU 05-08) that were installed in 2018.
- The Hospice generator (EU 06-01) has been added to the permit.
- Heat ratings and installation dates of boilers have been confirmed and updated.
- Installation dates and emission rates for insignificant activities have been added to EIS.
- Update the source name to “St. Elizabeth Medical Center – Edgewood”.

F-20-024 Emission Summary		
Pollutant	2019 Actual (tpy)	F-20-024
CO	5.71	71.19
NO _x	7.51	187.04
PT	0.53	15.17
PM ₁₀	0.51	15.17
PM _{2.5}	0.51	15.17
SO ₂	0.08	7.83
VOC	0.38	10.13
Lead	3.8x10 ⁻⁵	2.3x10 ⁻⁴
Greenhouse Gases (GHGs)		
Carbon Dioxide	7,913	124,684
Methane	0.15	1.83
Nitrous Oxide	0.04	1.81
CO ₂ Equivalent (CO ₂ e)	7,929	125,269
Hazardous Air Pollutants (HAPs)		
Hexane; N-Hexane	-	0.83
Combined HAPs:	0.005	1.10

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

SECTION 3 EMISSIONS, LIMITATIONS AND BASIS

Emission Units 01-01 and 01-02: Two Indirect Heat Exchangers (Boiler #1 and #2)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.36 lb/mmBtu (11.40 lb/hr)	401 KAR 59:015, Section 4(1)(c)	NG: 7.6 lb/mmscf; AP-42 Chapter 1.4-2 Fuel Oil: 2 lb/MGal; AP-42 1.3-1	PM and SO ₂ assumed while burning respective fuel. Opacity assumed when burning natrual gas, monitoring while burning #2 fuel oil
	20% Opacity	401 KAR 59:015, Section 4(2)(c)	NA	
SO ₂	1.41 lb/mmBtu (44.29 lb/hr)	401 KAR 59:015, Section 5(1)(c)	NG: 0.6 lb/mmscf; AP-42 Chapter 1.4-2 Fuel Oil: 0.71 lb/MGal; AP-42 1.3-1	

Initial Construction Date: 1976

Process Description:

EU 01-01 (Boiler #1)

Primary Fuel: Natural Gas

Secondary Fuel: Diesel (#2 Fuel Oil)

Maximum Firing Rate: 31.383 mmBtu/hr

Model: Kewanee Classic III 750 HP Boiler

EU 01-02 (Boiler #2)

Primary Fuel: Natural Gas

Secondary Fuel: Diesel (#2 Fuel Oil)

Maximum Firing Rate: 31.383 mmBtu/hr

Model: Kewanee Classic III 750 HP Boiler

Applicable Regulation:

401 KAR 59:015, New indirect heat exchangers.

State Origin Requirements:

401 KAR 63:020, Potentially hazardous matter or toxic substances applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances as defined in Section 2 of 401 KAR 63:020, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division.

Precluded Regulations:

401 KAR 63:002, Section 2(4)(jjjjj), 40 C.F.R. 63.11193 to 63.11237, Tables 1 to 8 (Subpart JJJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. To preclude applicability of 40 CFR 63, Subpart JJJJJJ, the permittee shall limit the combustion of liquid fuel to periods of natural gas curtailment, natural gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Emission Units 01-01 and 01-02: Two Indirect Heat Exchangers (Boiler #1 and #2)

Comments:

Emissions from the use of natural gas fuel are calculated based on emission factors from AP-42 Chapter 1.4 for all pollutants. Emissions from the use of fuel oil are calculated based on emission factors from AP-42 Chapter 1.3 for all pollutants.

While burning fuel oil, the permittee shall perform weekly qualitative visible observations to ensure compliance with the opacity limitation in 401 KAR 59:015.

Emission Unit 02: One Indirect Heat Exchanger (Boiler #3)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.32 lb/mmBtu (10.37 lb/hr)	401 KAR 59:015, Section 4(1)(c)	NG: 7.6 lb/mmscf; AP-42 Chapter 1.4-2 Fuel Oil: 2 lb/MGal; AP- 42 1.3-1	PM assumed while burning respective fuel. Opacity assumed when burning natural gas, monitoring while burning #2 fuel oil
	20% Opacity	401 KAR 59:015, Section 4(2)(c)	NA	
SO ₂	NG: 1.14 lb/mmBtu (36.71 lb/hr) Fuel Oil: 0.5 lb/mmBtu; or 0.5% S by weight of fuel	NG: 401 KAR 59:015, Section 5(1)(c); Fuel Oil: 40 CFR 60.42c(d)	NG: 0.6 lb/mmscf; AP-42 Chapter 1.4-2 Fuel Oil: 0.71 lb/MGal; AP-42 1.3-1	SO ₂ compliance assumed while burning natural gas Monitoring the Sulfur content of fuelwhile burning fuel oil

Initial Construction Date: 2004

Process Description:

EU 02 (Boiler #3)

Primary Fuel:	Natural Gas
Secondary Fuel:	Diesel (#2 Fuel Oil)
Maximum Firing Rate:	32.378 mmBtu/hr
Model:	Johnson PFTA800-4GL150S

Applicable Regulation:

401 KAR 59:015, New indirect heat exchangers which applies to indirect heat exchangers that are greater than one (1) mmBTU/hr, and less than or equal to 250 mmBTU/hr constructed after April 9, 1972.

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc), Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units is applicable to units and greater than 10 mmBTU/hr and less than or equal to 100 mmBTU/hr commenced after June 9, 1989.

Emission Unit 02: One Indirect Heat Exchanger (Boiler #3)

State Origin Requirements:

401 KAR 63:020, Potentially hazardous matter or toxic substances applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances as defined in Section 2 of 401 KAR 63:020, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division.

Precluded Regulation:

401 KAR 63:002, Section 2(4)(jjjjj), 40 C.F.R. 63.11193 to 63.11237, Tables 1 to 8 (Subpart JJJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. To preclude applicability of 40 CFR 63, Subpart JJJJJJ, the permittee shall limit the combustion of liquid fuel to periods of natural gas curtailment, natural gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Comments:

Emissions from the use of natural gas fuel are calculated based on emission factors from AP-42 Chapter 1.4 for all pollutants. Emissions from the use of fuel oil are calculated based on emission factors from AP-42 Chapter 1.3 for all pollutants.

Emission Units 05-01, 05-02, 05-05, 05-06, 05-07 and 05-08: Six Indirect Heat Exchangers (OSC Boiler 1, 2, 3, 4 and MOB Boiler 1 and 2)

Pollutant	Emission Limit or Standard (lb/mmBtu)	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	EU 05-01: 0.35 EU 05-02: 0.35 EU 05-05: 0.36 EU 05-06: 0.36 EU 05-07: 0.32 EU 05-08: 0.32	401 KAR 59:015, Section 4(1)(c)	7.6 lb/mmBtu AP-42 Chapter 1.4-2	Assumed while Burning Natural Gas
Opacity	20%	401 KAR 59:015, Section 4(2)(c)	NA	
SO ₂	EU 05-01: 1.33 EU 05-02: 1.34 EU 05-05: 1.39 EU 05-06: 1.38 EU 05-07: 1.14 EU 05-08: 1.14	401 KAR 59:015, Section 5(1)(c) 2. b.	0.6 lb/mmBtu AP-42 Chapter 1.4-2	

Initial Construction Date: 05-01: March 2003, 05-02: January 2003, 05-05: December 1984, 05-06: September 1988, 05-07 and 05-08: November 2018

Process Description:

EU 05-01: (OSC Boiler 1)

Primary Fuel: Natural Gas
Maximum Firing Rate: 1.9 mmBtu/hr
Model: Burnham V910A

EU 05-02: (OSC Boiler 2)

Primary Fuel: Natural Gas
Maximum Firing Rate: 1.9 mmBtu/hr
Model: Burnham V910A

EU 05-07: (OSC Boiler 3)

Primary Fuel: Natural Gas

EU 05-08: (OSC Boiler 4)

Primary Fuel: Natural Gas

Emission Units 05-01, 05-02, 05-05, 05-06, 05-07 and 05-08: Six Indirect Heat Exchangers (OSC Boiler 1, 2, 3, 4 and MOB Boiler 1 and 2)

Maximum Firing Rate:	1.004 mmBtu/hr	Maximum Firing Rate:	1.004 mmBtu/hr
Model:	CB CFH700-30-150ST	Model:	CB CFH700-30-150ST

EU 05-05: (MOB Boiler 1)

Primary Fuel: Natural Gas
Maximum Firing Rate: 1.8 mmBtu/hr
Model: Bryan CL180-W-GI

EU 05-06: (MOB Boiler 2)

Primary Fuel: Natural Gas
Maximum Firing Rate: 1.8 mmBtu/hr
Model: Bryan CL180-W-WT

Applicable Regulation:

401 KAR 59:015, New indirect heat exchangers.

State Origin Requirements:

401 KAR 63:020, Potentially hazardous matter or toxic substances applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances as defined in Section 2 of 401 KAR 63:020, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division.

Comments:

Emissions from the use of natural gas fuel are calculated based on emission factors from AP-42 Chapter 1.4 for all pollutants.

Emission unit 05 has been redesignated KYEIS numbers in order to more accurately represent the boilers at the facility. EU 05-07 and EU 05-08 have replaced former boilers EU 05-03 and EU 05-04. EU 05-07 and EU 05-08 stacks were merged together in 2018.

Emission Units 03-01, 03-02 and 03-03: Three Emergency Generators (EP13, EP14 and EP15)

Initial Construction Date: EU 03-01 and EU 03-02 – 1976; EU 03-03 - 1993

Process Description: All generators located in the main building

EU 03-01 (EP13)

Primary Fuel:	Diesel (#2 Fuel Oil)
Maximum Continuous Rating:	1,207 hp (900 kW)
Model:	Caterpillar D-399TA

Emergency Generator 1

EU 03-02 (EP14)

Primary Fuel:	Diesel (#2 Fuel Oil)
Maximum Continuous Rating:	1,207 hp (900 kW)
Model:	Caterpillar D-399TA

Emergency Generator 2

EU 03-03 (EP15)

Primary Fuel:	Diesel (#2 Fuel Oil)
Maximum Continuous Rating:	1,676 hp (1,250 kW)
Model:	Caterpillar 3512

Emergency Generator 3

Applicable Regulation:

401 KAR 63:020, Potentially hazardous matter or toxic substances applies to affected facilities which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not elsewhere subject to provisions of the administrative regulations. [State-Origin Requirement]

Emission Units 03-01, 03-02 and 03-03: Three Emergency Generators (EP13, EP14 and EP15)

Precluded Regulations:

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. These existing engines are considered institutional emergency RICE at an area source of HAP and they meet the definition of emergency engine as stated in 40 CFR 63.6640(f) and 40 CF 63.6675. Pursuant to 40 CFR 63.6585(f)(3) these engines are not subject to 40 CFR 63, Subpart ZZZZ.

Comments:

Emissions from the use of fuel oil are calculated based on emission factors from 40 CFR 98, Subpart C for green house gasses, and AP-42 Chapter 3.3 for all other pollutants.

Emission Units 04-01 and 04-02: Two Emergency Generators (Standby Generators 1 and 2)

Initial Construction Date: June 2005

Process Description:

<u>EU 04-01 (EP16)</u>	Standby Generator 1
Primary Fuel:	Diesel (#2 Fuel Oil)
Maximum Continuous Rating:	3,017 hp (2,250 kW)
Model:	Caterpillar 3512

<u>EU 04-02 (EP17)</u>	Standby Generator 2
Primary Fuel:	Diesel (#2 Fuel Oil)
Maximum Continuous Rating:	3,017 hp (2,250 kW)
Model:	Caterpillar 3512

Applicable Regulation:

401 KAR 63:020, Potentially hazardous matter or toxic substances applies to affected facilities which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not elsewhere subject to provisions of the administrative regulations. [State-Origin Requirement]

Precluded Regulations:

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. These existing engines are considered institutional emergency RICE at an area source of HAP and they meet the definition of emergency engine as stated in 40 CFR 63.6640(f) and 40 CF 63.6675. Pursuant to 40 CFR 63.6585(f)(3) these engines are not subject to 40 CFR 63, Subpart ZZZZ.

Comments:

Emissions from the use of fuel oil are calculated based on emission factors from 40 CFR 98, Subpart C for green house gasses, and AP-42 Chapter 3.3 for all other pollutants.

Emission Unit 06-01: One Emergency Generator (Hospice Generator)

Pollutant	Emission Limit or Standard (g/kW-hr)	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis (g/kW-hr)	Compliance Method
CO	3.5	40 CFR 60.4202(a)(2)	1.81, EPA certification	EPA Tier 2 Certified

Emission Unit 06-01: One Emergency Generator (Hospice Generator)															
NO _x	4.0		3.56, EPA certification												
PM	0.2		0.15, EPA certification												
<p>Initial Construction Date: 2007</p> <p>Process Description:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><u>EU 06-01 (EP18)</u></td> <td>Hospice Generator</td> </tr> <tr> <td>Primary Fuel:</td> <td>Diesel (#2 Fuel Oil)</td> </tr> <tr> <td>Maximum Continuous Rating:</td> <td>200 hp (149 kW)</td> </tr> <tr> <td>Model:</td> <td>Caterpillar D150</td> </tr> <tr> <td>Engine Family:</td> <td>6PKXL06.6PJ1</td> </tr> <tr> <td>Engine Certification:</td> <td>PKX-NR6-06-01</td> </tr> </table> <p>Applicable Regulation:</p> <p>401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines applies to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that are modified or reconstructed after July 11, 2005.</p> <p>401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.</p> <p>Comments:</p> <p>Emissions from the use of fuel oil are calculated based on emission factors from EPA's RICE archives for this make and model engine for NO_x, CO, and PM emissions. 40 CFR 98, Subpart C is used for greenhouse gas emissions, and AP-42 Chapter 3.3 is used for all other pollutants.</p>				<u>EU 06-01 (EP18)</u>	Hospice Generator	Primary Fuel:	Diesel (#2 Fuel Oil)	Maximum Continuous Rating:	200 hp (149 kW)	Model:	Caterpillar D150	Engine Family:	6PKXL06.6PJ1	Engine Certification:	PKX-NR6-06-01
<u>EU 06-01 (EP18)</u>	Hospice Generator														
Primary Fuel:	Diesel (#2 Fuel Oil)														
Maximum Continuous Rating:	200 hp (149 kW)														
Model:	Caterpillar D150														
Engine Family:	6PKXL06.6PJ1														
Engine Certification:	PKX-NR6-06-01														

Emission Unit 06-02: One Emergency Generator (OSC Generator)									
<p>Initial Construction Date: 2003</p> <p>Process Description:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><u>EU 06-02: (EP19)</u></td> <td>OSC Generator</td> </tr> <tr> <td>Primary Fuel:</td> <td>Diesel (#2 Fuel Oil)</td> </tr> <tr> <td>Maximum Continuous Rating:</td> <td>200 hp (149 kW)</td> </tr> <tr> <td>Model:</td> <td>Cummins DGFA</td> </tr> </table> <p>Applicable Regulation:</p> <p>401 KAR 63:020, Potentially hazardous matter or toxic substances applies to affected facilities which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not elsewhere subject to provisions of the administrative regulations. [State-Origin Requirement]</p> <p>Precluded Regulations:</p> <p>401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal</p>		<u>EU 06-02: (EP19)</u>	OSC Generator	Primary Fuel:	Diesel (#2 Fuel Oil)	Maximum Continuous Rating:	200 hp (149 kW)	Model:	Cummins DGFA
<u>EU 06-02: (EP19)</u>	OSC Generator								
Primary Fuel:	Diesel (#2 Fuel Oil)								
Maximum Continuous Rating:	200 hp (149 kW)								
Model:	Cummins DGFA								

Emission Unit 06-02: One Emergency Generator (OSC Generator)

Combustion Engines. These existing engines are considered institutional emergency RICE at an area source of HAP and they meet the definition of emergency engine as stated in 40 CFR 63.6640(f) and 40 CF 63.6675. Pursuant to 40 CFR 63.6585(f)(3) these engines are not subject to 40 CFR 63, Subpart ZZZZ.

Comments:

Emissions from the use of fuel oil are calculated based on emission factors from 40 CFR 98, Subpart C for green house gasses, and AP-42 Chapter 3.3 for all other pollutants.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

None

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of NO _x emissions	401 KAR 52:030, Federally-enforceable permits for nonmajor sources	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:015, New indirect heat exchangers.	01-01, 01-02, 02, 05-01, 05-02, 05-05, 05-06, 05-07 and 05-08
401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc), Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.	02
401 KAR 60:005 Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.	06-01
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.	06-01
401 KAR 63:020, Potentially Hazardous matter or toxic substances.	01-01, 01-02, 02, 03-01, 03-02, 03-03, 04-01, 04-02, 05-01, 05-02, 05-05, 05-06, 05-07, 05-08 and 06-02

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.	03-01, 03-02, 03-03, 04-01, 04-02 and 06-02
401 KAR 63:002, Section 2(4)(jjjjj), 40 C.F.R. 63.11193 to 63.11237, Tables 1 to 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.	01 and 02

Table D - Summary of Non Applicable Regulations:

None

Air Toxic Analysis

401 KAR 63:020, Potentially Hazardous Matter or Toxic Substances

Based upon the emission rates of toxics and hazardous air pollutants provided in the application and the source of these emissions being natural gas combustion, the Division determines the source is in compliance with 401 KAR 63:020.

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

	Permit type	Activity#	Complete Date	Issuance Date	Summary of Action
F-10-020	Conditional Major	APE20100001	6/13/2010	9/22/2010	Initial Permit
F-15-004	Conditional Major	APE20140001 APE20150001	4/22/2015	10/9/2015	Renewal and Adding Two Generators

SECTION 6 – PERMIT APPLICATION HISTORY
None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
VOC	– Volatile Organic Compounds

APPENDIX B – INDIRECT HEAT EXCHANGER HISTORY

Emission Unit	Construction Date	Date Removed	Heat Capacity (MMBtu/hr)	Total For the Year (T)	PM Emission Limit (E _P)*	SO ₂ Emission Limit (E _S)**
EU 01-01	1976	NA	31.38	62.76	0.36 lb/mmBtu	1.41 lb/mmBtu
EU 01-02	1976		31.38			
EU 05-05	December 1984		1.8	64.56	0.36 lb/mmBtu	1.39 lb/mmBtu
EU 05-06	September 1988		1.8	66.36	0.36 lb/mmBtu	1.38 lb/mmBtu
EU 05-03	1991	November 2018	1.3	68.96	0.36 lb/mmBtu	1.36 lb/mmBtu
EU 05-04	1991		1.3			
EU 05-02	January 2003	NA	1.9	70.86	0.35 lb/mmBtu	1.34 lb/mmBtu
EU 05-01	March 2003		1.9	72.76	0.35 lb/mmBtu	1.33 lb/mmBtu
EU 02	2004		32.38	105.14	0.32 lb/mmBtu	1.14 lb/mmBtu
EU 05-07	November 2018		1.004	105.72	0.32 lb/mmBtu	1.14 lb/mmBtu
EU 05-08	November 2018		1.004			

*E_P= 0.9634(T^{-0.2356}) in lb/MMBtu

**E_S= 7.7223(T^{-0.4106}) in lb/MMBtu